

REMARKS

Claims 1, 7 and 10 have been amended. Claims 4, 8 and 11 have been canceled. Claims 1-3, 5-7, 9-10 and 12-19 are presently pending.

The original drawings for the subject application are part of international application PCT/EP00/01093 and the Examiner indicated that he examined the application based upon these of record drawings. For the Examiner's convenience, enclosed please find a copy set of the original drawings as filed with the international application.

The Examiner objected to the drawings under 37 C.F.R. § 1.83(a) because they do not show every feature recited in the claims. Enclosed please find marked-up copies of original drawing Figs. 1 and 6 indicating proposed changes to overcome the Examiner's objections. Referring to Figs. 1 and 6, reference numerals have been added as follows to identify claimed features: ribs 13a (claim 5); radially extending ribs 13b (claim 6); radial channels 13c (claims 6 and 7); metal plate 15 (claim 7); radially inner end 17a and radially outer end 17b of the radial channel 13c (claim 7); pole faces 27c of the permanent magnet 27 and two pole faces 32a of the coils 32 (claim 10); more than three poles faces 32a of the coils (claim 12); position pick-up 50 (claim 13); rectifying circuit 54 (claim 18); and electronic inverter circuit 56 (claim 19). It is noted that the "return of the gaseous atmosphere" wording in claim 6, although not a claim limitation, is identified on Fig. 1 with reference numeral 13d. No new matter has been added by way of the amendment of the drawings. Accordingly, it is respectfully requested that the Examiner withdraw the objections to the drawings in view of the proposed drawing changes.

In addition, the specification has been amended to be consistent with and include the changes to the drawings. The wording of claims 5, 6 and 7, with reference numeral designations 13a, 13b, 13c, 13d, 15, 17a and 17b, has been substantially included on page 12 of the specification. Page 11 of the specification has been amended to include reference numeral designations 27c and 32a, which correspond to claim limitations recited in claims 10 and 12. The wording of claim 13, with reference numeral designation 50, has been substantially included on page 10 of the specification. The wording of claims 18 and 19, with reference numeral designations 54 and 56, has been substantially included on page 13 of the specification. No new matter has been added by way of the amendment of the specification.

As to the claim objections, claim 1 has been amended to replace "electric" with --An electric-- as required by the Examiner. Accordingly, the claim objection should be withdrawn.

In view of such amendments and the following remarks, reconsideration and allowance of the claims, as presently presented, are respectfully requested.

EXAMINER'S ACTION

The 35 U.S.C. § 112 Rejections

Claims 6 and 7 were rejected under 35 U.S.C. § 112, first paragraph. Based on the amendment of drawing Fig. 1 to include features identified in originally filed claims 6 and 7, and the incorporation of the claim wording of claims 6 and 7, with reference numeral designations, into the portion of page 12 of the specification describing circulating air flow in the interior of the housing of the claimed electric motor, it is clear that the interior of the housing of the claimed electric machine contains ribs, radial

channels formed between the ribs and a metal plate partially closing off the radial channels.

In addition, claims 1-19 were rejected under 35 U.S.C. § 112, second paragraph, for indefiniteness. Claim 1 has been amended to eliminate insufficient antecedent basis errors by reciting that the coil cores have “opposite end faces”, that the pairs of legs “... have a free end ... [and] are connected to one another in end regions....” Also, each mention of a “pole face” in claim 1 is a recitation of the same element, *i.e.*, the pole face of a permanent magnet. Further, the claim term “the radial walls” recited in claim 7 has an antecedent basis in claim 1. Also, claim 7 has been amended to recite “a radially inner end and a radially outer end” to eliminate the antecedent basis error.

Accordingly, it is respectfully requested that the Examiner withdraw the Section 112 rejections.

The 35 U.S.C. § 103 Rejections

Claims 1-3, 8-9, 15 and 17 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,982,058 (“Bustamante et al.”) in view of U.S. Patent No. 5,892,307 (“Pavlovich et al.”). In addition, claims 4-7 and 16 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Bustamante et al., in view of Pavlovich et al. as applied to claim 1, and further in view of U.S. Patent No. 3,999,092 (“Whiteley”). Also, claims 10-14 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Bustamante et al., in view of Pavlovich et al. as applied to claim 1, and further in view of U.S. Patent No. 5,757,100 (“Burgbacher”). Further, claims 18-19 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Bustamante et al., in view of Pavlovich et al. as applied to claim 1, and further in view of U.S. Patent No.

5,977,684 ("Lin"). Claim 1, and claims 2-3, 5-7, 9-10 and 12-19 which depend directly or indirectly from claim 1, clearly are patentable over the combinations of the references cited by the Examiner.

Claim 1, as amended, is directed to an electric machine including, in relevant part, a rotor with permanent magnets rotatably mounted in a housing. In addition, claim 1 states that the housing includes electromagnet components, which contain a coil core formed from coil windings, and that end faces of the coil core oppose pole faces of the permanent magnets. Claim 1 further requires that the housing "defines an interior which is closed off and sealed against the external atmosphere" and that the housing and the rotor, in combination, "define a flow path within the interior and extending through the coil windings" of the electromagnet components. The sealed, enclosed flow path, through which a "forced circulating flow of the air enclosed in the housing" is effected, provides for the removal of heat from within the interior of the housing, via the housing components such as the wall 16, end walls 14, 14b and ribs 13a, to outside of the housing. (See spec. at p. 12, lines 6-29).

The Examiner admitted that an electric machine including a housing defining an interior closed off and sealed against the external atmosphere, which is required by claim 1 as amended, is not taught or suggested by Bustamante et al., alone or in combination with Pavlovich et al. In addition, Bustamante et al. and Pavlovich et al. do not teach or suggest a housing and rotor combination that defines a flow path within the sealed, closed off interior of the housing and where the flow path extends through the coil windings of the electromagnet components, as required by claim 1. Although Whiteley appears to show a sealed housing, Whiteley does not cure the deficiencies of

Bustamante et al. and Pavlovich et al. as to the lack of a teaching or suggestion of the flow path within the sealed, closed off interior of the housing. It is, therefore, respectfully submitted that one skilled in the art would not have been motivated to modify the electric machine of Bustamante et al. and Pavlovich et al., in view of Whiteley, to include the flow path, which provides for internal circulation cooling of an electric machine having a sealed, closed off housing interior, as required by claim 1.

Accordingly, claim 1 is patentable over the cited references.

Claims 2-3, 5-7, 9-10 and 12-19, which depend directly from claim 1, are also patentable over the cited references for the reasons set forth above and because of the further restrictions they add. As to claims 6 and 7, although Whiteley shows heat dissipating fins on faces of the housing, nowhere does Whiteley disclose or suggest that the fins and rotor define radial channels for internal air circulation within the sealed interior housing of the claimed electric machine, which can provide for cooling of the machine, as claimed.

Withdrawal of the Section 103 rejections is, therefore, respectfully requested.

CONCLUSION

For the foregoing reasons, it is believed that all of the claims, as presently presented, are patentable.

The Examiner is invited to telephone the undersigned if it is believed that further amendment and/or discussion would help to advance the prosecution of the present application.

Reconsideration and allowance of claims 1-3, 5-7, 9-10 and 12-19 are, therefore,
respectfully requested.

Respectfully submitted,



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